## REMARKS / DISCUSSION OF ISSUES

Claims 1-5 are pending in the application.

The final Office action continues to indicate that a certified copy of the priority document has not been received. However, as explaining the previous Response filed on 7 July 2003, a certified copy of the priority document and a verified English translation were filed by U.S. mail on for February 2003. A copy of the claim for priority accompanying the priority document, showing a valid Certificate of Mailing, was filed with that response, and is provided herewith as well. The Examiner is therefore respectfully requested to acknowledge that the certified copy of the priority document and a verified English translation were received by the Office.

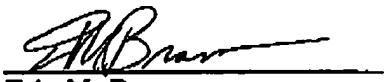
The claims 1-5 are rejected under 35 USC § 112, first paragraph. The final Office action continues to assert that "it is unclear as to how parasitic capacitance works in the absence of unexpected test results or any theoretical formula to support this limitation." Applicant respectfully resubmits that one skilled in the art knows how parasitic capacitance works and fully understands how to measure LCD parasitic capacitance, as evidenced for example by the publication "Back Light Inverters for LCDs" (copyright 2001-2002) published by Minebea Electronics Co., available on the Internet at http://www.minebea-ele.com/en/product/backl/C_3000/C_3001.html for instance, and therefore would easily be able to determine where to place the light sources to satisfy the parasitic capacitance criteria recited in claim 1.

The Examiner states that he was unable to access the web site referenced above. However, a hard copy of that document was submitted with the last Response. The undersigned accordingly encloses herewith another hard copy of the document in question published by the Minebea Electronics Co. This document shows that the concept and calculation of parasitic capacitance are well known in the art, and thus 35 USC § 112, first paragraph is satisfied. Therefore the feature relating to parasitic capacitance must be given patentable weight. Accordingly, withdrawal of the 35 USC § 112, first paragraph rejection of claims 1-5 is respectfully requested.

The final Office action rejects claims 1-5 under 35 USC § 103(a) over U.S. Pat. No. 6,390,638 B1 to Miller et al. Applicant respectfully traverses this rejection. Since the feature relating to parasitic capacitance should be given patentable rate as explained above, and that feature is not taught or suggested by Miller et al., withdrawal of the 35 USC § 103(a) rejection of claims 1-5 is respectfully requested.

In view of the foregoing, applicant(s) respectfully request(s) that the Examiner withdraw the rejections of record, allow all the pending claims, and find the application to be in condition for allowance. If any points remain in issue that may best be resolved through a personal or telephonic interview, the Examiner is respectfully requested to contact the undersigned at the telephone number listed below.

Respectfully submitted,



Eric M. Bram
Reg. 37,285
Att'y for Applicant(s)
Philips Intellectual Property
& Standards

P.O. Box 3001
Briarcliff Manor, NY 10510-8001
Phone: (914) 333-9635
Fax: (914) 332-06150

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of

MITSUTERO AKIHO

Atty. Docket No.

PHJ 99-028

Serial No.: 09/932,102

Group Art Unit: 2875

Filed: August 17, 2001

Examiner: Alavi Ali

Title: BACKLIGHT FOR LCDS

Honorable Commissioner for Patents
Washington, D.C. 20231

CLAIM FOR PRIORITY

Sir:

A certified copy and an verified English translation of the Japanese Application No. 99-358680 filed December 17, 1999 referred to in the Declaration of the above-identified application is attached herewith.

Applicant claims the benefit of the filing date of said Japanese application.

Respectfully submitted,

By _____
Eric M. Bram, Reg. 37,285
Attorney
(914) 333-9635

Enclosure

CERTIFICATE OF MAILING
It is hereby certified that this correspondence is being deposited with the United States Postal Service as first-class mail in an envelope addressed to:
COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231

On Feb. 4, 2003

By _____
e:\br\j99028.priority

FEB 07 2003

# VERIFICATION OF TRANSLATION

I, Akihiko Miyazaki of Philips Building, 13-37, Kohnan 2-chome, Minato-ku, Tokyo 108-8507 Japan, am the translator of the documents attached and state that the following is a true translation, to best of my knowledge and belief, of the certified copy of Japanese Patent Application No. 11-358680.

At Tokyo on this 22nd day of January, 2003

Akihiko Miyazaki

Akihiko Miyazaki

# JAPAN PATENT OFFICE

This is to certify that the annexed is a true copy of the following application as filed with this Office.

| | |
|---|---|
| Date of Application: | December 17, 1999 |
| Patent Application Number: [ST.10/C]: | 11-358680 [JP1999-358680] |
| Applicant(s): | Koninklijke Philips Electronics N.V. |

December 27, 2002

Shinichiro OHTA, Commissioner, Patent Office

Certification No. 2002-3102778

# 日本国特許庁
# JAPAN PATENT OFFICE

別紙添付の書類に記載されている事項は下記の出願書類に記載されている事項と同一であることを証明する。

This is to certify that the annexed is a true copy of the following application as filed with this Office

出願年月日
Date of Application: １９９９年１２月１７日

出願番号
Application Number: 平成１１年特許願第３５８６８０号

[ST.10/C]: [ＪＰ１９９９－３５８６８０]

出願人
Applicant(s): コーニンクレッカ　フィリップス　エレクトロニクス　エヌヴィ

２００２年１２月２７日

特許庁長官
Commissioner,
Japan Patent Office 太田信一郎

出証番号　出証特２００２－３１０２７７８

Minebea

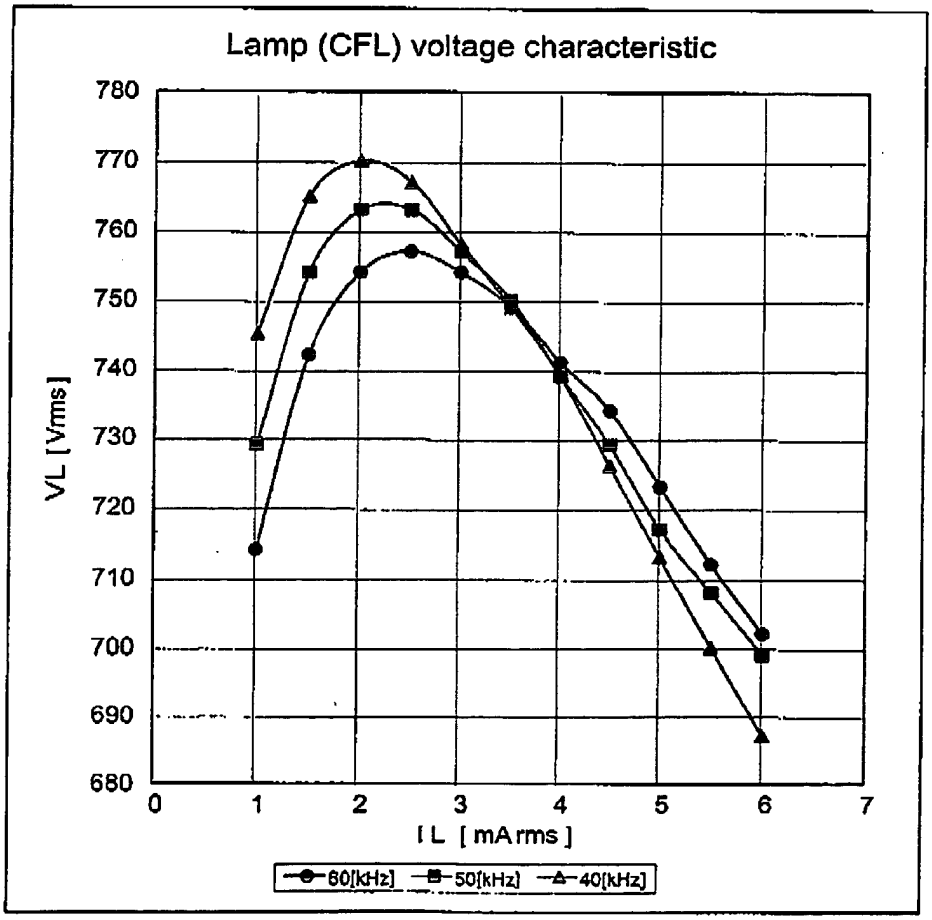
Back Light Inverters for LCDs

# Our Technology

## CHARACTERISTICS

### 1. Lamp (CFL) voltage characteristic

This is the data for lamp voltage characteristics of CFLs built into a 20-inch 12-lamp LCD. CFLs have negative resistance characteristics so that the more the lamp current (IL) flowing to the CFL is increased, the more the lamp voltage (VL) decreases. Lamp current (IL) is decided so that the lamp operates in the range that lamp voltage decreases rectilinearly. Depending on the frequency of the lamp's current, lamp voltage varies. The frequency of this CFL is stable with lamp current of 3.5 to 4.0 mA. Electrical efficiency of the inverter is calculated with an understanding of these lamp voltage characteristics.




Values shown in the web site are representative of this type. Design, Specifications are subject to change without notice.

Minebea

# Back-Light Inverters for LCDs
# Our Technology

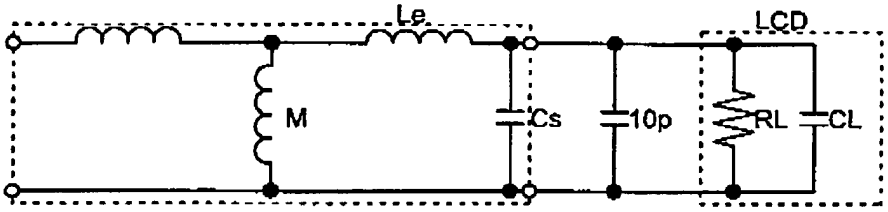
**CHARACTERISTICS**

## 2. Leakage transformer equivalent network and LCD parasitic capacitance

This is an example where the leakage transformer degree of coupling (K) is lowered below 0.9, and the leakage inductance of the transformer secondary size is increased. When the degree of coupling (K) is reduced to below 0.9, the transformer's passband width is narrow, and as only the chosen frequency is transferred, this offers the best characteristics as a transformer for use with backlight inverters.

The equivalent networks of leakage transformers including LCD panels are as follows.

- Leakage transformer:
  Primary: 25 turns Secondary: 2,390 turns Gap: 75 μm
  Secondary side inductance LS: 510 mH
  Secondary side leakage inductance (Lk) of primary side short-circuit: 183 mH
- LCD panel: 13.3 inch, 14.1 inch, 15.0 inch




Le: Leakage inductance expected with coupling coefficient (K)
M : Mutual inductance
K : Coupling coefficient
Cs: Line capacity of the transformer secondary side
RL : Negative resistance of the CFL
CL : Parasitic capacitance of the CFL

Equivalent network constants can be found using the formula below.
F1 is the resonance frequency with the secondary side disconnected
F is the secondary side resonance frequency

$Cs = 1/((2\times\pi\times F1)\wedge 2\times Ls)$
$K = \sqrt{(1-(Lk/Ls))}$
$Le = (1-K)\times Ls$
$M = K\times Ls$
$Co = 1/((2\times\pi\times F)\wedge 2\times Le)$
$CL = Co-(10PF + Cs)$

From this Le = 101.6 mH, K = 0.8, M = 408.4 mH, Cs = 4.2 pF can be found.
Calculating the parasitic capacitance of LCD panels using these constants gives the following values.

- 13.3-inch panel: 15.2 pF
- 14.1-inch panel: 14.5 pF
- 15.0-inch panel: 18.0 pF

Understanding the parasitic capacitance of the LCD, we can design the c nstants of th leakage transformer.

Values shown in the web site are representative of this type. Design, Specifications are subject to change without notice.